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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,317	06/19/2001	Stanley T. Crooke	IBIS-0369	6909

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EXAMINER

CHAKRABARTI, ARUN K

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 10/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/884,317

**Applicant(s)**

CROOKE ET AL.

**Examiner**

Arun Chakrabarti

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-94 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Action*.

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10, 23, and 78-82 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 10, and 23, the phrase "capable of" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Regarding claim 78, the phrase "bindable" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

4. Claims 13-81, and 88-94 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,329,146 B1 . Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-35 of U.S. Patent No. 6,329,146 B1 disclose the basic and fundamental method of instant claims 13-81, and 88-94 for identifying a binding site for a ligand present in a combinatorial mixture on a biomolecular target and a method for determining the relative binding affinity of a binding agent for a preselected biomolecular target and also a method for screening a plurality of biomolecular target agents in a combinatorial library of compounds, comprising the common steps:

- a) collecting mass spectral fragmentation data for the biomolecular target;
- b) providing a complex of the biomolecular target and the binding agent;
- c) ionizing the complex in a mass spectrometer to provide one or more ions of the complex;
- d) fragmenting at least one of the ions deriving from the complex;
- e) collecting fragmentation data from the fragmentation of the ions from the complex; and
- f) relating the fragmentation data of the ions of the complex with the fragmentation data from the biomolecular target to determine the site of binding.

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5. Claims 1-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,329,146 B1 in view of Egli et al. (Proc. Natl. Acad. Sci. USA, (1992), Vol. 89, pages 534-538).

Claims 1-9 of U.S. Patent No. 6,329,146 B1 disclose a method comprising the steps;

- a) providing a complex of the biomolecular target and the binding agent;
  - b) ionizing the complex in a mass spectrometer to provide one or more ions of the complex;
  - c) fragmenting at least one of the ions deriving from the complex;
  - d) collecting fragmentation data from the fragmentation of the ions from the complex;
- and
- e) relating the fragmentation data of the ions of the complex with the fragmentation data from the biomolecular target to determine the site of binding.

Claims 1-9 of U.S. Patent No. 6,329,146 B1 do not disclose a method, wherein three dimensional structure of a nucleic acid is determined providing a chimeric version of the nucleic acid having at least one modified subunit in a preselected position of the chimera.

Egli et al teach a method, wherein three dimensional structure of a nucleic acid is determined providing a chimeric version of the nucleic acid having at least one modified subunit in a preselected position of the chimera (Abstract, Figures 1-5 and Methods section).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the method wherein three dimensional

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structure of a nucleic acid is determined providing a chimeric version of the nucleic acid having at least one modified subunit in a preselected position of the chimera of Egli et al in the method claims of U.S. Patent No. 6,329,146 B1, since Egli et al. state, "The RNA trimer may, therefore, lock the complete fragment in the A-type conformation (Abstract, last sentence)". By employing scientific reasoning, an ordinary practitioner would have been motivated to combine and substitute the method wherein three dimensional structure of a nucleic acid is determined providing a chimeric version of the nucleic acid having at least one modified subunit in a preselected position of the chimera of Egli et al in the method claims of U.S. Patent No. 6,329,146 B1 in order to improve the process for determining the three dimensional structure of a nucleic acid and in order to achieve the express advantages, as noted by Egli et al, of an invention which provides RNA trimer that may lock the complete fragment in the stable A-type conformation that is suitable for the three dimensional structure determination.

6. Claims 82-87 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of 10-19 of U.S. Patent No. 6,329,146 B1 in view of Hancock et al. (U.S. Patent 5,716,825) (February 10, 1998).

Claims 10-19 of U.S. Patent No. 6,329,146 B1 disclose a method for identifying a binding site for a ligand on a biomolecular target comprising the steps;

- a) collecting mass spectral fragmentation data for the biomolecular target;
- b) providing a complex of the biomolecular target and the binding agent;

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- c) ionizing the complex in a mass spectrometer to provide one or more ions of the complex;
- d) fragmenting at least one of the ions deriving from the complex;
- e) collecting fragmentation data from the fragmentation of the ions from the complex; and
- f) relating the fragmentation data of the ions of the complex with the fragmentation data from the biomolecular target to determine the site of binding.

Claims 1-9 of U.S. Patent No. 6,329,146 B1 do not disclose a method, wherein the binding site is a metal ion binding site selected from sodium, magnesium or manganese.

Hancock et al teach a method, wherein the binding site is a metal ion binding site including the suggestion of any desired metal (Column 6, lines 37-42).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the method wherein the binding site is a metal ion binding site including the suggestion of any desired metal of Hancock et al. in the method of claims 1-9 of U.S. Patent No. 6,329,146 B1, since Hancock et al. state, "However, other commercially available inert materials can be used where it is desired to use the surface to actively capture an analyte or as a reaction zone for chemical modification of the analyte (Column 6, lines 38-42)." By employing scientific reasoning, an ordinary practitioner would have been motivated to combine and substitute the method wherein the binding site is a metal ion binding site including the suggestion of any desired metal of Hancock et al. in the method of claims 1-9 of U.S. Patent No. 6,329,146 B1 in order to improve the process for determining the

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activity of DNA binding factor and in order to achieve the express advantages, as noted by Hancock et al, of an invention which provides any commercially available inert materials that can be used where it is desired to use the surface to actively capture an analyte or as a reaction zone for chemical modification of the analyte.

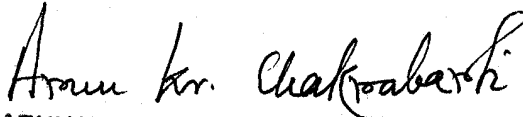
***Conclusion***


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph. D., whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-7401.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group analyst Chantae Dessau whose telephone number is (703) 605-1237.

Arun Chakrabarti,  
Patent Examiner,  
March 26, 2002

  
**ARUN K. CHAKRABARTI**  
**PATENT EXAMINER**

  
**W. Gary Jones**  
**Supervisory Patent Examiner**  
**Technology Center 1600**